A NEW ALTERNATIVE IN MIGRAINE TREATMENT: ELETRIPTAN HYDROBROMIDE BUCCAL ORGANOGELS

Naku K.[1], Mehmed D. A.[1], Güneş M.[1], Karavana S.Y. [1]
[1]Ege University, Faculty of Pharmacy, Department of Pharmaceutical Technology, Bornova, İzmir
e-mail:kejsi.naku@live.com, doamehmed123@gmail.com, melihaagunes@gmail.com, sinem.yaprak.karavana@ege.edu.tr
Telephone number: +905073033623, +905224627510, +905541881027, +905326113241
https://doi.org/10.5281/zenodo.10677928

ABSTRACT
Migraine is a disorder characterized by severe, intermittent throbbing pain in the head, often accompanied by sensitivity to light and sound, as well as nausea and vomiting. Eletriptan hydrobromide (EHB) is a highly selective serotonin 5-HT1B/1D receptor agonist administered orally in the acute treatment of moderate or severe migraine attacks. In migraine patients, pain-induced vomiting and nausea may complicate medication intake. Inhibition of critical gastrointestinal motility and delayed gastric emptying time during a migraine attack is also a major problem. Taking into consideration all these data, the importance of unconventional dosage forms in migraine treatment emerges. The fact is that buccal formulations are important in terms of rapid effect, easy use in patients with swallowing difficulties, and ease of use in patients with nausea/vomiting complaints, and in cases requiring drug intake without water.

KEYWORDS: Migraine, Buccal, Eletriptan hydrobromide, Organogel

RELEVANCE OF THE TOPIC
With this buccal formulation, it is aimed to offer a new alternative treatment that will make a difference in the current migraine treatment.

PURPOSE OF THE STUDY
Development and *in vitro* characterization of EHB buccal organogel formulations for migraine treatment.

RESEARCH METHODS
Organogels were prepared by using the seed oil/olive oil. Aerosil and Ethyl cellulose were used as gelling agent. Tocopheryl acetate chosen as an antioxidant. The formulations were evaluated for their pH values, textural, rheological and mucoadhesive properties. At the same time *in vitro* release studies were carried out.

MAİN RESULTS AND CONCLUSIONS

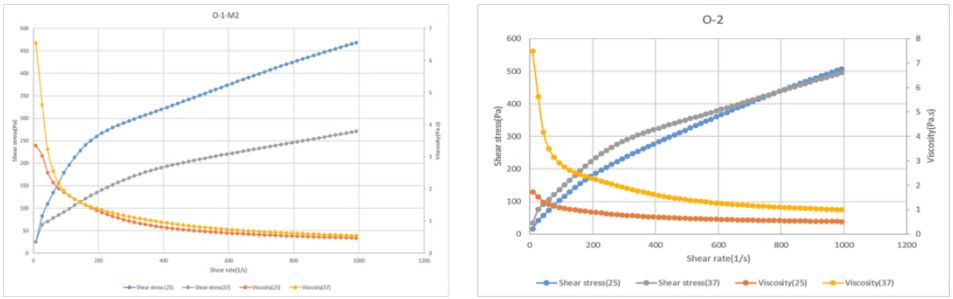


Figure 1 The flow and viscosity curve of the formulations at 25 ºC and 37 ºC

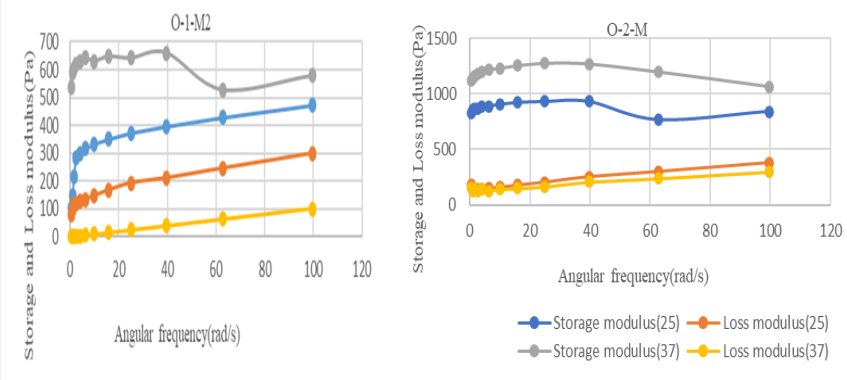
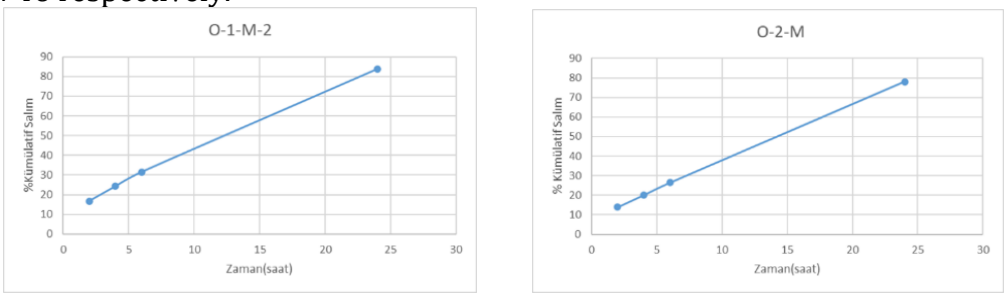


Figure 2 The oscillation curve of the formulations at 25ºC and 37ºC

The pH values and mechanical properties of the gel formulations were observed suitable for buccal application. Mucoadhesion of O-1-M-2 and O-2-M were found 91,53±5,174 and 158,50±8,746 respectively.



As a result of our project work, it has been shown that organogel formulations containing EHB are potential formulations that can be used buccally in the treatment of migraine and have the appropriate properties.

REFERENCES

1.Jones, D. S., Bruschi, M. L., de Freitas, O., Gremião, M. P. D., Lara, E. H. G., Andrews, G. P. 2009. "Rheological, mechanical and mucoadhesive properties of thermoresponsive, bioadhesive binary mixtures composed of poloxamer 407 and carbopol 974P designed as platforms for implantable drug delivery systems for use in the oral cavity". International Journal of Pharmaceutics, 372(1–2), 49–58.

2.Karavana, S. Y., Rençber, S., Ay, Z., Balo, E. 2012. "A New In-Situ Gel Formulation of Itraconazole for Vaginal Administration", 2012(October), 417–426.

3.Diener, H. C., Pfaffenrath, V., Schnitker, J., Friede, M., Henneicke-Von Zepelin, H. H. 2005. "Efficacy and safety of 6.25 mg t.i.d. feverfew CO2-extract (MIG-99) in migraine prevention - A randomized, double-blind, multicentre, placebo-controlled study". Cephalalgia, 25(11), 1031–1041.